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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,804	01/25/2002	Hideyoshi Tsuruta	782 215	9257

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EXAMINER

THOMAS, ERIC W

ART UNIT	PAPER NUMBER
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2831

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,804

Applicant(s)

TSURUTA ET AL.

Examiner

Eric W Thomas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Applicant is required to rewrite paragraph 0009 excluding the reference to claim

1.

Appropriate correction is required.

Claim Objections

2. Claim 1 is objected to because of the following informalities:

Claim 1 line 2, change "provide" to --provided--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3-4 are rejected under 35 U.S.C. 102(e) as being anticipated by

Kosakai (US 6,556,414).

FIG. 1B

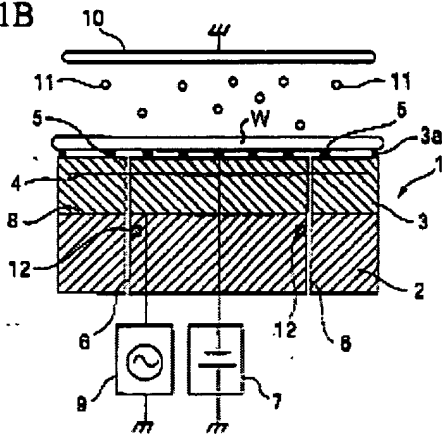
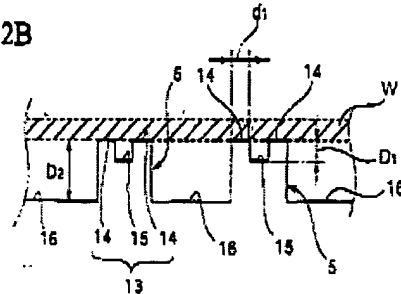


FIG. 2B



Kosakai discloses in fig. 1B, & 2B, an electrostatic chuck having an insulation layer including a mount plane on which a wafer (W) is mounted, an inner electrode provided in the insulation layer, and projecting portions (see fig. 2B) protrude from the mount plane which include contact planes to be contacted to the wafer, wherein a backside gas is flowed in a space defined by the mount plane (see col. 6 lines 38-43), the projecting portions and the wafer under such a condition that the wafer is attracted to the mount plane so as to maintain a temperature uniformly of the wafer, the heights of the projecting portions are not less than 5 microns and not more than 10 microns (see col. 7 lines 35-43).

Kosakai does not expressly state that the (chuck) has a construction such that a total amount of areas of the contact planes of the projecting portions is not less than 5 % and not more than 10 % with respect to the inner electrode. The chuck of Kosakai inherently possess this structural limitation (see col. 6-7, lines 61-67, lines 1-5, "the area ratio of the total area of the specimen holding surfaces to the total area of the attachment region 3b (area remaining after subtracting the area of the peripheral wall 3a

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from the area of the dielectric layer) should be 0.5-30%"; and fig. 1B illustrates the internal electrode having the same surface area as the 3b).

Regarding claim 3, as seen in fig. 1A, Kosakai illustrates the projecting portions are aligned side-by-side continuously.

Regarding claim 4, Kosakai discloses a substrate processing apparatus wherein a predetermined process is applied to a plane of a substrate, comprising: a process chamber in which the predetermined process is performed: the electrostatic chuck of claim 1, used for electrostatically attracting and holding the substrate at a predetermined position in the process chamber; and a power source for attracting used for electrostatically attracting the substrate to the electrostatic chuck.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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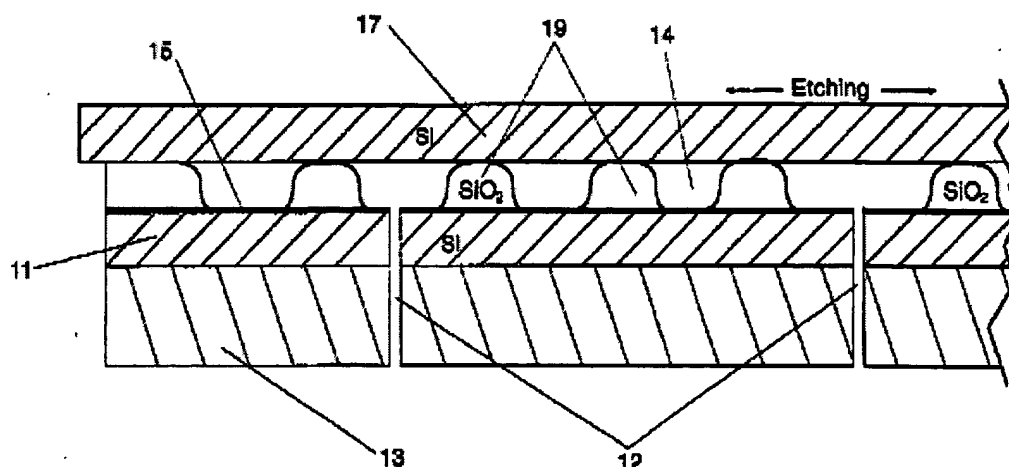
consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosakai (US 6,556,414) in view of Anderson et al. (US 6,117,246).

Kosakai discloses the claimed invention except for the diameters of the projecting portions are not less than 1.0 mm and not more than 2.0 mm.

Anderson et al. teach the use of projections having diameters of 1-10mm. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the projections of Kosakai having a diameter of 1mm to 2mm as taught by Anderson et al., since such a modification would have involved a mere change in the size of a component, a change in size is generally recognized as being within the level of ordinary skill in the art. *In re. Rose*, 105 USPQ 237 (CCPA 1955).

8. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (US 5,583,736) in view of Burkhardt (US 5,825,607).



Anderson et al. disclose in fig. 1, an electrostatic chuck having an insulation layer (15', 19) including a mount plane on which a wafer (17) is mounted, an inner electrode (11) provided on the insulation layer, and projecting portions (19) protrude from the mount plane which include contact planes to be contacted to the wafer, wherein a backside gas is flowed in a space defined by the mount plane (co. 4 lines 15-40), the projecting portions and the wafer under such a condition that the wafer is attracted to the mount plane so as to maintain a temperature uniformly of the wafer, the heights of the projecting portions are 5 microns (see col. 5 lines 35-50).

Anderson et al. do not expressly state that the (chuck) has a construction such that a total amount of areas of the contact planes of the projecting portions is not less than 5 % and not more than 10 % with respect to the inner electrode. The chuck of Anderson et al. inherently possesses this structural limitation (see col. 4 lines 45-50) the chuck-face area occupied by the islands would fall in the range of 0.5 % to 5 %; and fig. 1 illustrates the internal electrode having the same surface area as the fraction of the chuck-face area).

Anderson et al. do not disclose the inner electrode is formed in the insulation layer.

Burkhart illustrate in fig. 1, an inner electrode that is provided in an insulation layer. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Anderson et al. by forming the internal electrode in the insulation layer, as taught by Burkhart, since such a modification would protect the

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internal electrode from the external environment (electrically isolates the internal electrode).

Regarding claim 2, Anderson discloses the diameters of the projecting portions are not less than 1.0 mm and not more than 2.0 mm (see col. 4 lines 45-50).

Regarding claim 3, Anderson disclose the projecting portions are aligned side-by-side continuously.

Regarding claim 4, Anderson disclose a substrate processing apparatus wherein a predetermined process is applied to a plane of a substrate, comprising: a process chamber in which predetermined process is performed; the electrostatic chuck set forth in claim 1 used for electrostatically attracting and holding the substrate at a predetermined position in the process chamber, and a power source for attracting used for electrostatically attracting the substrate to the electrostatic chuck.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric W Thomas whose telephone number is (703) 305-0878. The examiner can normally be reached on Mon & Sat 9:00AM - 9:30PM; Tues-Fri 5:30PM-10:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 703-308-3682. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ewt
July 7, 2003

A handwritten signature in black ink, appearing to read "Anthony Dinkins". The signature is fluid and cursive, with a large initial "A" and a stylized "D".

**ANTHONY DINKINS
PRIMARY EXAMINER**